

In the Specification:

1    **TITLE OF INVENTION**

2    Method and System for Increasing Expected Rate of Return and Maximum Payout in a  
3    Game with One or More Players

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5    **CROSS-REFERENCE TO RELATED APPLICATIONS**

6    This application claims benefit of U.S. Provisional Patent Application Nos. 60/260,546,  
7    filed January 8, 2001 and 60/260,547, filed January 8, 2001, both of which are hereby  
8    incorporated by reference.

9

10    **BACKGROUND OF THE INVENTION**

11    The global gaming industry is enormous, generating many billions of dollars in annual  
12    revenue. It is a significant part of the global economy, with important relationships to the  
13    global travel, entertainment, and telecommunications industries. Directly and indirectly,  
14    the global gaming industry entertains and employs millions of people.

15

16    For all its value to the global economy, gaming has an obvious downside. The vast  
17    majority of customers of the gaming industry lose money. This is true whether they visit  
18    casinos, place bets over the internet, or buy lottery tickets. Most of these losses are  
19    small; some, however, are catastrophic to the people involved.

20

21    Current games typically have--for the average player-- negative expected rates of  
22    return, with the house receiving cumulative net gains. Obviously, there are individual  
23    players who win money, hot tables, etc., but these are, for the most part, statistical  
24    anomalies and do not disprove the above statement.

25

26    A more serious exception should be noted: occasionally, a player devises a way to  
27    "beat the dealer" at his own game. In such cases, a window opens in which, for certain  
28    players, the true expected rate of return is greater than the house believes.

29

30 In short order, the house adapts, either by changing the game or ejecting the  
31 excessively successful player(s); otherwise the game soon ends, for the simple reason  
32 that the house cannot afford to play a losing game indefinitely, any more than a player  
33 can.

34

35 Another limitation of the gaming industry is that large prizes cannot be offered unless  
36 some entity is willing to accept the risk of payout. For example, assume that a lottery  
37 wishes to offer a one billion dollar prize with appropriately long odds against anyone  
38 winning the prize. The prize cannot be offered unless a backer willing to accept the risk  
39 of payout can be found. Insurance and reinsurance companies offer backing for certain  
40 rare events, such as holes-in-one; but for truly enormous prizes there may be no entity  
41 ready to accept the risk.

42

43 **BRIEF SUMMARY OF THE INVENTION**

44 The present invention addresses the problems of low expected rates of return and the  
45 difficulty of finding guarantors for large payouts by providing two independently useful  
46 and mutually complementary modules:

47

48 A return enhancement module that facilitates the design of games of chance and/or  
49 skill such that losers may be the exception rather than the rule. Analytically, this module  
50 provides a way to increase the expected return in a game of chance and/or skill  
51 involving one or more players.

52

53 A payout enhancement module that facilitates larger prize pools by creating financial  
54 instruments whose value is linked to the play of one or more games of chance and/or  
55 skill. This payout enhancement module may also be used in connection with other  
56 events that can be modeled in a game-theoretic framework.

57

58 As used herein, the term "residual value" refers to a number, which may preferably be a  
59 positive number less than one, used to indicate the portion of a player's financial

60 consideration allocated to purchase of assets rather than to play. It may be expressed  
61 as a percentage. In an alternative preferred embodiment, the residual value may be  
62 greater than or equal to one, in which case the game sponsor or an affiliated entity may  
63 be extending credit to the player.

64

65 As used herein, the term "expected rate of return" refers to a predicted average value of  
66 return, which may be expressed as an annualized percent.

67

68 As used herein, the term "payout structure" refers to a definition showing the set of  
69 possible payouts from a game, along with the estimated odds of each payout.

70

71 As used herein, the term "token" refers to a lottery ticket, gambling chip, game piece,  
72 electronic game piece, or other artifact used to represent value for gaming purposes.

73

74 **BRIEF DESCRIPTION OF THE DRAWINGS**

75

76 The above summary of the invention will be better understood when taken in  
77 conjunction with the following detailed description and accompanying drawings in  
78 which:

79 Figure 1 is a block diagram of an architecture suitable for implementing the present  
80 method and system;

81 Figure 2 is a flow chart of a preferred embodiment of the operation and use of the  
82 return enhancement module;

83 Figure 3 is a flow chart of a preferred embodiment of the operation and use of the  
84 payout augmentation module; and

85 Figure 4 is an illustration of the flow of money in an embodiment of a game of the  
86 present invention.

87

88 **DETAILED DESCRIPTION OF THE INVENTION**

89

90 The present invention addresses the problem of low expected rates of return and the  
91 difficulty in finding backers for large prize payouts. It comprises two independently  
92 useful and mutually complementary components for expected return enhancement and  
93 maximum payout augmentation.

94

- 95 • A return enhancement module (REM) that facilitates the creation, modification, and  
96 operation of games of one or more players characterized by increased expected  
97 return.
- 98 • A payout augmentation module (PAM) that facilitates the creation and administration  
99 of financial instruments linked to gaming or other events and useful to gaming  
100 entities and to investors seeking portfolio diversification.

101

102 Each of the above modules may be used singly or in combination to facilitate creation  
103 and operation of games in which losers are the exception rather than the rule and in  
104 which prizes can be substantially larger. In a preferred embodiment, the modules are  
105 implemented as part of a secure, interactive, online network, e.g., a virtual private  
106 network accessible via an internet protocol. In a preferred embodiment, the modules  
107 themselves may be implemented in software, hardware, or any appropriate combination  
108 of the two. This allows for efficient design and administration of games and financial  
109 instruments.

110

111 A suitable architecture for implementing the present method and system is shown in  
112 Fig. 1. As shown in Fig. 1, the architecture comprises a return enhancement module 15,  
113 a payout augmentation module 25, a game playing module 35, and an investment  
114 management module 45. These modules may preferably be operated and maintained  
115 by an entity that conducts one or more games as described below. In some preferred  
116 embodiments, one or more of the modules, such as investment management module  
117 45, may be operated and maintained by a distinct entity, such as an investment entity.  
118 A plurality of players 55 and investors 65 preferably interact with these modules via  
119 appropriate networks and/or other communications means as described above.

120  
121     **RETURN ENHANCEMENT MODULE**  
122     This module provides a way to increase the expected return in a game involving one or  
123     more players. For example, this module may be used to change a zero-sum game into  
124     a positive sum game that benefits all (or nearly all) players. The module facilitates these  
125     benefits without harming the gaming industry's profitability; indeed, it makes possible a  
126     significant expansion of an industry whose growth prospects might otherwise be  
127     questionable.  
128  
129     REM operates to link games (such as lotteries, casino gambling, and internet gambling)  
130     to assets (such as bonds, gold coins, mutual funds, and savings accounts). Games are  
131     typically characterized by expected rates of return (to all players, excluding the house)  
132     that are zero or negative. Many assets are characterized by expected rates of return  
133     that are positive.  
134  
135     The present system and method provide a mechanism by which an entity that conducts  
136     games may change the payout structure for players of a game from the payout  
137     structure associated with the game alone to a payout structure that is a function of both  
138     the game and one or more assets. More specifically, in a preferred embodiment, a  
139     residual value is chosen that will be used to determine the portion of a player's financial  
140     consideration for participating in the game that will be allocated to the purchase of one  
141     or more assets. The assets to be purchased are also chosen. As noted below, the  
142     residual value and asset distribution may be determined by either the player or the  
143     entity that conducts the game.  
144  
145     When a player submits his or her financial consideration for participation in the game, a  
146     portion of the financial consideration (defined by the residual value) is allocated to  
147     purchase the one or more assets. As a result , the player's payout structure for  
148     participating in the game is modified from that of the game alone and is a function of  
149     the game, the selected residual value, and the selected one or more assets.

150

151 Three exemplary applications for REM are described below:

152

153 REM casinos may issue chips whose value is only partially determined by the outcome  
154 of the games played at the casino. Alternatively, the casino may simply record each  
155 player's participation without distributing a physical or electronic chip. A residual value  
156 (RV), which can range from close to 0% up to close to 100% is preferably retained by  
157 the player who may be issued a receipt whenever (s)he buys chips. If the casino  
158 operator or affiliated entity extends credit to a player, then the RV can equal or exceed  
159 100%. The receipt, which may be paper-based, or stored in an electronic or analogous  
160 data storage device, retains its value for the customer independently of what happens  
161 to the chips. The value of the chips for gaming purposes is decremented in the amount  
162 of the RV, less an optional processing fee. For example, if the RV is 50%, there is no  
163 processing fee, and a player purchases \$500 in chips, what the player actually receives  
164 is \$250 in gaming value and a receipt worth \$250 that is linked to one or more assets.

165

166 In one preferred embodiment, the residual value would not affect the notional amount of  
167 chips issued to a player. A given sum of money would purchase the same apparent  
168 notional value of chips no matter which RV is in effect at the time of sale. Such RV is  
169 referred to herein as transparent residual value ("TRV"). TRV may preferably be  
170 implemented by coding the chips in such manner that a casino's games will recognize  
171 the chips net value (face value less residual value) and will automatically adjust payout  
172 odds and/or amounts appropriately.

173

174 In a second preferred embodiment, the residual value would be reflected in the notional  
175 amount of chips issued to a player. A given sum of money would purchase a value of  
176 chips reduced by the amount allocated to acquisition of assets. Such RV is referred to  
177 herein as subtractive residual value ("SRV"). SRV may preferably be implemented by  
178 multiplying the RV percentage by the value of chips notionally purchased to determine  
179 the value of chips to be given to the player.

180  
181 REM internet betting facilities may issue virtual "chips" whose value is only partially  
182 determined by the outcome of the games played. Alternatively, the facility may simply  
183 record each player's participation without distributing a physical or electronic chip. A  
184 residual value (RV), which can range from close to 0% up to close to 100% is preferably  
185 retained by the player who may be issued a receipt whenever (s)he buys "chips". If the  
186 internet betting facility operator or affiliated entity extends credit to a player, then the RV  
187 can equal or exceed 100%. The receipt, which may be paper-based, or stored in an  
188 electronic or analogous data storage device, retains its value for the customer  
189 independently of what happens to the chips. The value of the chips for gaming  
190 purposes is preferably decremented in the amount of the RV, less an optional  
191 processing fee. For example, if the RV is 50%, there is no processing fee, and a player  
192 purchases \$500 in chips, what the player actually receives is \$250 in gaming value and  
193 a receipt worth \$250 that is linked to one or more assets.

194  
195 REM lotteries. State run lotteries generate billions of dollars in revenue for the states,  
196 by dangling a small number of very large prizes in front of millions of suggestible  
197 individuals, and spending lavishly on advertising and related promotions. The net result  
198 is additional money for the states, a few new millionaires, millions of small losses, and  
199 all-too-many ruinous losses.

200  
201 An REM lottery ticket has a residual value (RV) which can range from close to 0% up to  
202 close to 100%. Alternatively, the lottery operator may simply record each player's  
203 participation without distributing a physical or electronic ticket. If the lottery operator or  
204 affiliated entity extends credit to a player, then the RV can equal or exceed 100%. A  
205 receipt, which may be paper-based (e.g., the ticket can serve as the receipt), or stored  
206 in an electronic or analogous data storage device, retains its value for the customer  
207 independently of the outcome of the lottery. The value of the ticket for gaming purposes  
208 is preferably decremented in the amount of the RV, less an optional processing fee. For  
209 example, if the RV is 50%, there is no processing fee, and a player purchases \$50 in

210 lottery tickets, what the player actually receives is the equivalent of \$25 in traditional  
211 lottery-ticket value and a receipt worth \$25 that is linked to one or more assets.

212

213 In each of these examples, REM works by linking gaming to accumulation of assets.  
214 These assets may include:

- 215 1. fixed income instruments/securities including U.S. government savings bonds
- 216 2. equity securities(shares of stock)
- 217 3. mutual fund shares, other investment company shares, and/or "folios"
- 218 4. derivative instruments with value linked to objectively verifiable economic/financial  
219 data
- 220 5. bank deposits, including CDs, savings accounts, and interest-bearing checking  
221 accounts
- 222 6. other approved savings or investment vehicles that might be issued and/or backed by  
223 governments, government agencies, corporations, and/or other organizations

224

225 Specific examples of RV assets may include: long-term bonds with high credit quality,  
226 paying a guaranteed rate; shares in an equity index, linked to specific equity securities  
227 or broad market indices such as the Standard & Poor's 500 Index.

228

229 The expected return from a game designed in accordance with the present invention is  
230 preferably a function of a plurality of factors including the RV percentage, the expected  
231 return of the underlying asset(s), processing fees if any, holding period of the RV, the  
232 expected return of the games played by the player, and the number of plays. In general,  
233 the higher the RV, the higher the expected return of the underlying asset(s), the lower  
234 the processing fees, the longer the holding period of the RV, the higher (i.e., less  
235 negative) the return on play, and the smaller the number of plays, the higher will be the  
236 expected rate of return on the game.

237

238 One preferred embodiment would combine a high RV with a high expected rate of  
239 return on the underlying asset(s), no processing fee, long holding period, near

240 breakeven return on play, and small number of plays. This combination of factors might  
241 well provide a higher expected return than many conservative investments.

242

243 On the other hand, a low RV with a poor return on play would likely be as poor an  
244 investment as a straight lottery ticket (or retail commodity trading) is today.

245

246 Features that would discourage turnover on the asset side would have a positive effect  
247 on expected returns. If, for example, RVs can be deposited into brokerage accounts, or  
248 if state or national lotteries are recast as combination lotteries/savings bond drives, an  
249 enormous amount of saving and investment activity could be created. REM savings  
250 bonds, issued by the U.S. Treasury, could be bought and sold at banking institutions.

251

252 In one preferred embodiment of the present invention, the amount (percentage) and/or  
253 type of assets are selected by the players. For example, one player may choose an RV  
254 of 50% and an asset type of U.S. government savings bond, while another player may  
255 choose an RV of 150% and an asset class of marginable stock.

256

257 In another preferred embodiment of the present invention, the amount (percentage)  
258 and/or type of assets are selected by the game operators. For example, a New York  
259 State Lottery could stipulate an RV of 20% invested in New York State bonds whose  
260 proceeds would help finance reconstruction of lower Manhattan. A United States  
261 Lottery could stipulate an RV of 80% that would go directly into a players individual  
262 retirement account (or comparable Social Security Account, should these exist).

263

264 Widespread adoption of games designed in accordance with the present invention may  
265 enable operators of lotteries and other games to influence players' choices of assets.  
266 Widespread adoption of such games could also reduce the impoverishing effect of  
267 gaming while encouraging saving and investment in the individuals and families  
268 currently least well served by the investment industry. It could be a "win-win" situation

269 for all concerned: for players, for the gaming industry, and for the securities industry as  
270 well.

271

272 A preferred embodiment for operation and use of return enhancement module 15 of  
273 Figure 1 is now described in connection with Figure 2 and Figure 4. Figure 2 illustrates  
274 the steps of said preferred embodiment. Figure 4 illustrates the flow of money or other  
275 financial consideration in said preferred embodiment.

276

277 Flows of money or other financial consideration are shown as solid head arrows in  
278 Figure 4. An example is element 431, the flow of money used to purchase tokens.  
279 Said flow of money is from players 402, 404, 406 to an entity 405 conducting a game.

280

281 Quantities of money or other financial consideration are shown as vertical bars or  
282 vertical open head arrows in Figure 4. An example of a vertical bar is element 422a.  
283 Said element represents the money from player 402 used to purchase a game token  
284 412. An example of an open head arrow is element 420a. Said element represents the  
285 total money paid by players 402, 404 and 406 to purchase game tokens 412, 414 and  
286 416 from entity 405 conducting a game.

287

288 Stick figures in Figure 4 each represent a set of one or more individual players. An  
289 example is element 402. Said element represents a set of one or more players who  
290 win a game as discussed below.

291

292 Rectangles with recurved corners in Figure 4 represent entities. Element 405, for  
293 example, represents an entity conducting a game.

294

295 Rectangles with a folded corner represent a set of one or more tokens. Element 412 is  
296 an example.

297

298 As shown in step 1 of Figure 2 and further illustrated in Figure 4, an entity 405  
299 conducting a game provides one or more tokens 412, 414, 416 to one or more players  
300 402, 404, 406 for financial consideration 420a. Thus, for example, where the game is a  
301 lottery, a player 402 may purchase one or more lottery tickets 412 for, e.g., \$1 (422a)  
302 per ticket. Alternatively, the entity conducting the game may simply record each player's  
303 participation in the game without distributing a physical or electronic token.

304

305 For purposes of the present example, it will be assumed that the game to be played is a  
306 lottery with the following rules. Six numbers from a total of 48 numbers will be drawn at  
307 random. Any ticket holder 402 who correctly identifies all six numbers will share 441 in  
308 a prize 421 which pays \$50,000,000 over 20 years, with a net present value of  
309 \$20,000,000. Revenue from ticket sales minus the \$20,000,000 needed to fund the  
310 prize will be kept 445 by the entity running the lottery and/or distributed 443 to  
311 charitable or governmental entities 403 in accordance with any agreements between  
312 those entities or as required by law. The amount distributed as prize money is element  
313 421. The amount kept by the entity running the game is 425. The amount distributed  
314 to a charitable or governmental entities is element 423. If no prize is awarded, the  
315 \$20,000,000 is preferably added to the prize pool for a future lottery.

316

317 In step 2 of Figure 2 and as further illustrated in Figure 4, said entity 405 operating said  
318 game allocates a portion 420b of the financial consideration to purchase 433 one or  
319 more assets 420c. As noted above, this allocation is preferably determined as a  
320 function of the residual values 422b, 424b, 426b defined for the players and/or game.  
321 Thus, continuing with the above example, if the residual value is 50%, the entity will  
322 allocate 50 cents of every dollar (or other suitable currency) received from the player to  
323 the purchase of one or more assets.

324

325 In step 3 of Figure 2, the entity or its agent or other affiliated entity purchases one or  
326 more assets with the allocated portion of the financial consideration. Thus, continuing  
327 with the above example, if the entire residual value is to be invested in 12-year zero-

328 coupon U.S. government bonds with a 6% yield to maturity, 50 cents of every dollar  
329 received from the player will be used to purchase such bonds.

330

331 Referring to Figure 4, in a preferred embodiment, the purchased assets 420c are added  
332 to accounts 422c, 424c, 426c associated with the players 402, 404, 406. The accounts  
333 may be automatically established upon receipt of financial consideration from the  
334 players or may alternatively be a previously established accounts specified by the  
335 players or the entity.

336

337 Continuing with the above example, if 100,000,000 tickets are sold to 25,000,000  
338 players at a cost of \$1 per ticket, and if (for purposes of the example) an RV of 50% is  
339 established for the game (i.e., the same RV for every player), and if (for purposes of the  
340 example) all allocated portions of the received sales revenue is put to purchase of the  
341 above-described bonds, then the present example would result in purchase of  
342 \$50,000,000 worth of the above-described bonds distributed (preferably as fractional  
343 ownership interest in individual bonds) among the 25,000,000 players in accordance  
344 with the number of tickets that each player purchased.

345

346 In step 4 of Figure 2 and as further illustrated in Figure 4, the game is conducted 432 by  
347 the entity. Thus, continuing with the above example, lottery numbers for the lottery are  
348 drawn and e.g., broadcast or otherwise transmitted by television or other suitable  
349 medium to the ticket holders participating in the lottery.

350

351 In step 5 of Figure 2 and as further illustrated in Figure 4, players 402 who are winners  
352 in the game receive 441 payouts 421 in accordance with the rules of the game and the  
353 results of the game's playing. Thus, continuing with the above example, if three players  
354 each hold one ticket with the winning numbers then each winning player would share in  
355 the prize of \$50,000,000, whose net present value cost to the entity operating the  
356 lottery is \$20,000,000. The remaining \$30,000,000 would be allocated between the  
357 entity running the lottery and the other entities, as noted above. Also, as noted above, if

358 there is no winner, the \$20,000,000 prize money would preferably be held as additional  
359 prize money for a future lottery.

360

361 In step 6 of Figure 2, each player determines whether he or she wishes to sell one or  
362 more of the assets held in his or her account. Continuing with the above example, if the  
363 player wishes to sell one or more assets, he or she would receive the current market  
364 value of the assets, less a sales commission.

365

366 As illustrated in Figure 4, if the players 402, 404, 406 decided not to sell their assets,  
367 the cash value 420d of the assets 422d, 424d, 426d purchased with the allocated  
368 portion of the players' financial consideration would, at maturity 434, be approximately  
369 equal to the dollar value 420a of the original ticket purchases. The assets would then  
370 be disbursed 435 to said players.

371

372

### 373 PAYOUT AUGMENTATION MODULE

374 As noted above, in a preferred embodiment, the present system and method may also  
375 comprise a payment augmentation module to facilitate backing of large gaming prizes.  
376 This module may be used by the gaming industry (and others such as state-run  
377 lotteries, financial institutions, etc.) to offer far larger prizes than would otherwise be  
378 possible and otherwise link financial instruments to the outcomes or other events  
379 associated with the playing of one or more games. In this aspect, the disclosed system  
380 and method employ financial instruments linked to external events ("FILs") that are  
381 designed to help insurers and reinsurers to hedge the risk they incur when they  
382 guarantee a prize.

383

384 For example, say that there are ten state lotteries, each offering \$1 billion prizes, each  
385 with odds of a hundred to one against there being a winner. Without FILs, insurers and  
386 reinsurers are limited to private transactions to apportion the risk among themselves.

387 For large risks, however, they may be left with more collective risk than they want to

388 hold. With FILs, they can hedge that risk by selling a securitized form of the risk they  
389 wish to reduce. In the present example, the FIL would be a lottery-backed security  
390 ("LBS"). LBSs would be highly attractive to institutional and other investors as portfolio  
391 diversifiers, because such investors often need to find assets whose return  
392 characteristics have a low correlation to the balance of their portfolios.

393

394 FILs operate to link games to financial instruments whose value depends upon the  
395 outcome or other events associated with those games. Three exemplary applications  
396 for PAM are described below:

397

398 FILs for casino (or internet) games are preferably fixed- or floating-rate debt instruments  
399 linked to the outcome of specific casino (or internet) games (e.g., blackjack) at specific  
400 casinos during specific periods of time. These instruments may have a convertibility  
401 feature, allowing holders to exchange them at certain periods for a specified amount of  
402 equity securities which may be issued by the same or a related issuer. They may also  
403 be issued with embedded options, either to allow the issuer to call the debt at certain  
404 times and under certain conditions, or to allow the debt-holder to put the debt back to  
405 the issuer.

406

407 FILs for lotteries are preferably fixed- or floating-rate debt instruments backed by the  
408 outcome of specific lottery games (e.g., pick 6 Lotto) offered by specific entities (such  
409 as New York State) at specific periods of time. These instruments may have a  
410 convertibility feature, allowing holders to exchange them at certain periods for a  
411 specified amount of equity securities which may be issued by the same or a related  
412 issuer. They may also be issued with embedded options, either to allow the issuer to  
413 call the debt at certain times and under certain conditions, or to allow the debt-holder to  
414 put the debt back to the issuer.

415

416 State run lotteries generate billions of dollars in revenue for the states. By enabling  
417 states (and other organizations) to offer much larger prizes, FILs can help these

418 organizations raise additional revenues. In the case of state lotteries, such revenues  
419 may allow states to significantly reduce taxes.

420

421 Multi-FILs are preferably fixed- or floating-rate debt instruments backed by the outcome  
422 of a collection of casino, internet, lottery, and/or other games. They may be created by  
423 combining existing FILs or directly. These instruments may have a convertibility feature,  
424 allowing holders to exchange them at certain periods for a specified amount of equity  
425 securities which may be issued by the same or a related issuer. They may also be  
426 issued with embedded options, either to allow the issuer to call the debt at certain times  
427 and under certain conditions, or to allow the debt-holder to put the debt back to the  
428 issuer. Multi-FILs may be a convenient way for institutional investors to acquire a target  
429 allocation in this asset class. They may vary as to composition and percentage  
430 breakdown, to allow investment managers greater flexibility and to help address any  
431 constraints with respect to investment policies (e.g., investing in state-issued debt may  
432 be preferred by one type of fund, another type of fund might exclude certain games or  
433 companies to meet a socially responsible investing agenda, etc.)

434

435 A beneficial side-effect of FILs is the low expected correlation between their  
436 performance and those of conventional securities. Of course, fixed rate debt  
437 instruments will be sensitive to changes in interest rates, and convertible bonds will be  
438 affected by the general vigor of the economy.

439

440 Nonetheless, the underlying value and the return characteristics, driven by the outcome  
441 of random events, is by definition uncorrelated to anything else, making FILs a  
442 potentially superior source of investment diversification than any existing financial  
443 instrument. In a preferred embodiment, fund managers or others may design FILs  
444 whose returns will have a correlation coefficient of zero to a given set of other financial  
445 instruments. The creation of a market in FILs would not only help create more exciting  
446 games for millions of people; it would provide investors, in particular institutional money  
447 managers responsible for the retirement security of hundreds of millions of people, with

448 a sorely needed portfolio diversification tool. And it would offer governments an  
449 attractive means of raising greater revenues and/or lowering taxes.

450

451 A preferred embodiment for operation and use of payout augmentation module 25 is  
452 now described in connection with Fig. 3. As shown in Fig. 3, in step 1, an entity selects  
453 one or more games to link to one or more financial instruments. For purposes of  
454 example, assume that the entity is an insurance company that wishes to sell corporate  
455 bonds and to link the bonds' yield to the outcome of a multi-state lottery.

456

457 In step 2, a set of characteristics that define each financial instrument is defined. The  
458 characteristics preferably include characteristics that define the financial instrument's  
459 value as a function of one or more outcomes or events associated with the one or more  
460 games. Thus, continuing with the above example, the insurance company may design  
461 par value AAA rated corporate bonds with a yield equal to:

462

463 the prevailing yield for this type of credit plus 20 basis points if there is no grand prize  
464 winner in the multi-state lottery; and  
465 the prevailing yield for this type of credit minus 180 basis points if there is at least one  
466 winner.

467

468 For purposes of this example, it is assumed that the odds of there being at least one  
469 winner in the multi-state lottery are 10 to 1 against.

470

471 In step 3, the entity determines the amount of each financial instrument it wishes to  
472 issue (e.g., \$5,000,000,000 of the bonds defined above). In step 4 the entity sells the  
473 one or more financial instruments to one or more buyers at a mutually agreed price and  
474 quantity. In a preferred embodiment, these purchasers may include institutional  
475 investors desiring to purchase the financial instrument to diversify their portfolios, as  
476 described above.

477

478 In step 5, the one or more games are played, resulting in one or more outcomes or  
479 other events. Thus, continuing with the above example, the lottery is conducted and  
480 either results in no winner or in at least one winner.

481

482 In step 6, the financial instrument is valued as a function of the one or more outcomes  
483 or other events. Thus, continuing with the above example, if there is no winner of the  
484 multi-state lottery, the bonds are valued assuming a yield equal to the prevailing yield  
485 for this type of credit plus 20 basis points. Alternatively, if there is at least one winner of  
486 the multi-state lottery, the bonds are valued at the prevailing yield for this type of credit  
487 minus 180 basis points.

488

489 In step 7, financial obligations between the entity and purchasers on the one or more  
490 financial instruments are determined using the above valuations. In step 8, appropriate  
491 payments are made between the parties to satisfy those financial obligations.

492

493 While the invention has been described in conjunction with specific embodiments, it is  
494 evident that numerous alternatives, modifications, and variations will be apparent to  
495 those skilled in the art in light of the foregoing description.